REMARKS

This Amendment is filed in reply to a non-final Office Action mailed on September 17, 2009. Claims 29, 31, 33, 34-45, 47, and 49-56 are currently pending, with claims 35-44 and 51-56 being withdrawn from consideration. Claims 29, 31, 33, 34, 45, 47, 59 and 50 stand rejected under 35 U.S.C. §103(a) as unpatentable over Kawakami (U.S. 6,949,312) as a single reference. In response, Applicants amend independent claims 29 and 45 to require that the anode active material have a median particle size of about 50 micrometers or less. Support for this amendment can be found at least in paragraph [0031] to the Applicants' specification. Claims 34 and 50 are also amended to correct a dependency and to specify the range of the median size. Support for this range can be found throughout the Examples and specifically in Table 6. No new material has been added by way of these amendments.

Independent claims 29 and 45 contain parallel claim aspects for an alloy material including an element M capable of being alloyed with lithium and at least one kind of element R selected from elements with atomic number of 20 or less, except for hydrogen, lithium and a noble gas. The element M includes tin and at least one kind selected from nickel, copper, iron cobalt, manganese, zinc, indium and silver. The content of R ranges from about 10 wt% to about 50 wt%. The alloy material has a particle size distribution of about 50 micrometers or less and a half-width of an X-ray diffraction peak that is about 5° or more. Dependent claims 31 and 47 further specify the element R. Applicants assert that Kawakami fails to supply each and every aspect of the claimed invention and that the Patent Office is improperly picking and choosing among the disclosure of Kawakami to reach the obviousness rejection.

For each of the following claim aspects, the Patent Office has cited to parts of Kawakami that it admits do not meet the claimed aspect, but still allegedly satisfy the prima facie case of obviousness. Applicants respectfully disagree with each assertion for the following reasons.

Applicants describe the claim aspect R as elements with atomic number of 20 or less, and specifically exclude lithium and the noble gases. In contrast Kawakami discloses X as basically every element outside of the transition metals. Specifically, Kawakami discloses nearly all the p-block, s-block and f-block (lanthanides) as elements that are acceptable for Kawakami's X. (Applicants accept for purposes of this discussion that Kawakami's X is comparable to Applicants' R.) X can also be lithium, which is specifically excluded from the claimed

invention. Moreover, X is not even required as part of the compounds described by Kawakami. (See Kawakami abstract.) Forty different elements are listed in the abstract for Kawakami's X.

Applicants describe the claim aspect M as including tin and one of 8 other transition metal elements. In contrast Kawakami discloses the entire block of transition metal elements as acceptable. Based on the disclosure in Kawakami, Sn x 30 transition metals x 40 listed elements for X equals 1200 different possible compounds for just Sn.A.X. In contrast, Applicants Sn x 8 elements x 16 R's equals 128 possible M.R compounds. More specifically for claims 31 and 47, that value drops to just 48 possible compounds. Applicants assert that this narrow subset of compounds satisfies the genus-species distinction discussed in MPEP 2144.08.

Applicants describe the claim aspect of a half-width of an X-ray diffraction peak of about 5 degrees or more. The Patent Office asserts that this is met by the limitation of greater than 0.5 degree or more. Presumably, this position is because 5 is in fact greater than 0.5 and therefore Applicants' range included in Kawakami's range. Applicants have previously pointed out the surprising benefit that a particle with half-width in the a X-ray diffraction of 5 degrees or greater gives retention ratios of 90% or more. Applicants' Table 5. In contrast, the entirety of Kawakami fails to suggest a value of greater than 5 degrees, with the exception of two specific values. Entries 23 and 24 have half widths of 10 and 8.0. However, the compounds for these two peaks fail to include an R group at 10-50 wt%. Entry 23 has no R, and entry 24 has Al at 0.8 wt percent.

Applicants describe the claim aspect of R at 10 to 50 weight % of the anode material. The Patent Office asserts that this is met by the paragraph at col. 13, ln. 11-15 in Kawakami. Applicants respectfully disagree. Kawakami discloses 1-30 atomic percent of nitrogen or sulfur. Atomic percent values are not the same as weight percent values, and because tin is an element in the composition, the atomic percentages are going to be much larger than the corresponding weight percentages. As an example (most favorable to the Patent Office), a compound with $Sn_{20}Sc_{50}N_{30}$ has a nitrogen weight percentage of 8.3 wt %. This example presumes the lowest molecular weight transition metal for A and the minimum 20 atomic % for tin as prescribed by the abstract. Simply put, the paragraph asserted by the Patent Office does not meet the limitation of 10 to 50wt% R.

Applicants describe the claim aspect of a median particle size of less than 50 micrometers. The Patent Office asserts that this aspect is met by the paragraph at col. 10, ln. 18-22. This section of Kawakami describes crystallite sizes of less than 500 angstroms, which is equal to 0.05 micrometers (not 50 micrometers). While 0.05 is indeed less than 50, the Patent Office is simply misapplying the disclosure of Kawakami to the claimed invention by citing crystallite size from X-ray diffraction analysis. Crystallite sizes are not the same measurement as particle sizes. Applicants suspect that this section was cited to simply to meet a numerical limitation without any consideration for relevance to the claim.

In each of these claim aspects, Applicants have identified and claimed aspects of the invention that distinguish it from the prior art. Applicants have discovered that a M-R with a high level of R – 10-50 weight percent – gives high charge retention ratios. The anode particles are highly amorphous, and limited to a small selection of lower molecular weight elements for R. The particles must be less than about 50 microns as a median size. Dependent claims 31 and 47 even further narrow that set of elements R.

Applicants assert that the Patent Office has not been able to point to any particular disclosure for these claim aspects. The weight range cited by the Patent Office fails to meet the claimed limitation. The section of Kawakami alleged for median particle size is not even relevant. The R groups claimed by the Applicants are disclosed in a collection of other elements, most of which are completely excluded from the claimed invention. And Kawakami simply does not disclose a particle with x-ray diffraction half-width of 5 degrees or more for the claimed R elements.

In effect, the Patent Office is selectively picking and choosing values within the specification of Kawakami that read on each of the claimed aspects, but the items either are unrelated to each other or are not related to the claim aspect they allegedly read on. As a specific example, the only support for any value for half-width of greater than 5 degrees, the Patent Office points to entries 23 and 24 in Table 11, but disregards those entries' failure to meet the claimed aspects of R and 10-50 wt%. This selective picking and choosing is still proscribed, even post-KSR. See *Sanofi-Synthelabo v. Apotex, Inc*, 470 F.3d 1368 (Fed. Cir. 2008); *In re Kubin*, 08-1184, (Fed. Cir. 2009). Applicants have described and claimed an anode material with a high degree of amorphous character containing from about 10 to 50 percent weight of low

atomic number elements that provides high retention ratios. In contrast Kawakami describes compounds that do not meet the high degree of amorphous character demonstrated by the claimed invention, and that do not contain the high levels of lower atomic number elements.

For these reasons, Applicants assert that the claimed compounds are not obvious over the disclosure in Kawakami, and that the Patent Office is selectively picking and choosing sections of Kawakami that are either unrelated to the claimed invention, or divorced from the relevant claim aspect. For these reasons, Applicants request that the rejection be withdrawn, the application is now in condition for allowance, and earnestly solicit the same.

The Commissioner is hereby authorized to charge any fees that may be required or credit any overpayment to Deposit Account No.: 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. 3712174-485 on the account statement.

Respectfully submitted,

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